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July 19, 1999

Ms. Bonnie Lavelle  
U.S. Environmental Protection Agency  
Region VIII  
999 18<sup>th</sup> Street, Suite 500  
Denver, CO 80202-2466

RE: Draft Project Plan for the Vasquez Boulevard/I-70 Site  
Phase III Field Investigation

Dear Ms. Lavelle:

Thank you for the opportunity to review the draft report titled Draft Project Plan for the Vasquez Boulevard/I-70 Site Phase III Field Investigation, prepared by ISSI Consulting Group, Inc. I also appreciated greatly the opportunity to discuss the sampling plan and clarify concepts during our meeting of July 15, 1999. Our comments have been modified substantially by the concepts discussed at this meeting, which need to be more fully captured in the final Project Plan. We have the following comments:

1. General. It appears that, in order to develop a statistically defensible sampling plan, a better estimate of the "true" average concentration in a yard, and to minimize false positive sampling error, EPA has decided to forgo sampling methodologies that would provide information on the spatial distribution of contamination across a residential yard. Based on our discussions, the methods proposed to numerically screen composite results for the potential for "hotspot" locations, and EPA's commitment to resample or clean up those properties where results fail this screening so potentially may contain a hotspot, we can support the sampling methodologies proposed.
2. P. 2-2, Previously sampled residential properties "will not be re-sampled during Phase III unless it is determined that the existing data for a property are not adequate to support a reliable risk assessment and remedial decisions. This determination will be presented in a separate document." We understand that discussions will be held in the future regarding the usability of sampling data from previously sampled properties, and that concepts similar to those contained in the Phase III Sampling Plan will be used to screen the previous data for usability. Some

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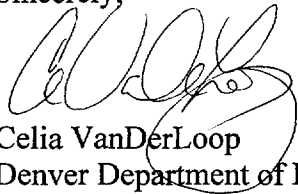
previously-sampled properties may need to be resampled during future investigations or during the Feasibility Study phase. It may be appropriate to include consideration of Phase III sampling data results, and revisit the issue subsequent to availability of Phase III sampling data.

3. P. 2-6. The text states "...it is expected that the identification of the property as potentially unacceptable can readily be made based on a comparison of the sample mean to the RBC. That is if the sample mean is above the RBC, the property may be classified as a potentially unacceptable without regard to the value of the UCL. Therefore, the possibility of incorrectly identifying the property as acceptable when it is really not acceptable is very small." Further discussion of this concept is needed within the plan. In particular, the relationship between the RBC and subchronic and acute levels of concern should be clarified.
4. P. 2-6 through 2-8. The discussion and rationale for the sampling approach appear based on the goal of avoiding Type 1 errors (false positives). No explanation or evaluation of the probability of making Type II (false negative) errors is provided. The sampling approach must be designed to avoid false negative results, and the methodology and rationale for avoiding false negative results must be clearly explained. The rationale also appears based entirely upon evaluation of data from the unimpacted or background properties, with the apparent assumption that these data are distributed similarly to contaminant patterns from impacted properties. We understand that the highly impacted properties will be identified as of concern regardless of their data distribution. However, further explanation should be provided in the text regarding why this methodology is conservative for mid-range properties, or properties with hot-spots.
5. P. 2-6 though 2-8. The text states "The number of composites per yard depends on the acceptable probability of making a Type I (false positive) error." It is unclear why the number of composites depends upon only the acceptable probability of making a Type I error, and not of making a Type II (false negative) error. This needs to be more clearly explained.
6. P. 2-14. A brief explanation of what is meant by "unpaved alley" would be helpful. For example, if an alley is paved or covered with "black gold" yet has exposed dirt strips separating the paved areas from the areas represented by the sampling conducted in a residential yard, will this alley be considered for inclusion? Many Denver residential areas have the residential "yard" extending to a fence, but the fence is not directly adjacent to the alley pavement or "black gold".
7. P. 2-16. While many of the schools and parks have already been sampled, the sampling frequency provided is minimal, and may not be representative of the entire property. Many of these schools and parks are large properties, yet only two samples were collected on some. These properties should be resampled to improve the confidence in sampling results. In addition, it is not clear that all day-care/child-care facilities (non-residential) have been identified and will be sampled. These types of facilities, if located within the study area and not previously sampled, should be identified and sampled during Phase III.
8. P. 3-6 through 3-7. The text is unclear whether each subsample will be placed in a separate ziplock bag, dried, sieved, then combined, or all subsamples will be placed in the same ziplock bag, mixed, taken to the lab, dried, and sieved. Methods should be described for mixing composite samples to ensure that the selected 10 g sample is representative of a mixture of all 10 subsamples. The methodology should be field-tested and verified with analytical results from the composites and subsamples to ensure that mixing techniques are adequate.

9. P. 3-14 through 3-17. The discussion regarding sampling schools and parks inadvertently references residences. If the sampling for schools and parks is expected to be conducted as a part of Phase III, the separate plan regarding frequency and distribution of sampling for each school or park must be made available for review relatively quickly. As mentioned above, childcare facilities should also be addressed if located within the study area.
10. P. 3-18. What procedures will be put in place to allow identification of samples by location? When reviewing previous data, it has been important to be able to identify the location of samples, and also the concentrations found at adjacent properties. There have been numerous instances where sample results by location have been needed on a timely basis, without inconveniencing EPA and/or its contractor, to determine location-specific results or if a specific property has been sampled. Some methodology for identifying sample location is needed, both in hard copy reports made available to the public and in electronic format. Analytical data with property location identifiers should also be made available in electronic format upon request. It seems easy enough to provide an alpha-numeric key that can be used to identify sample location, while still maintaining the anonymity of samples through laboratory analysis. Previous sampling reports have provided locational keys that allow for sample results to be identified by location, yet still obscure sample locations sufficiently to address privacy issues.
11. P. 3-19. We assume that all samples, including bulk and fine subsamples, will be archived.
12. Appendix 1 and Attachment 1 (to Appendix 1). Appendix 1 describes the need to conduct a special study to evaluate whether thallium should be retained as a chemical of potential concern (COPC), and implies that, based on this study, thallium was not retained. However, Attachment 1 to Appendix 1 only describes the methodology of the special study and does not provide the study results, providing no basis for the conclusion to discard thallium as a COPC. The study results are needed, or thallium should be retained.
13. The development, origin, meaning, and use of the simulations needs clearer explanation in order to justify how 10 subsamples were selected and 3 mean values were selected as the sampling design.
14. Attachment 1. A more detailed discussion regarding the ability of this sampling regime to detect hot spots of sub-chronic or acute concern is needed. One important component is a clarification of the relationship between the RBC and sub-chronic and acute screening concentrations. As the RBC changes, sub-chronic and acute screening concentrations are expected to also change due to similar assumptions regarding bioavailability, etc. This allows screening for properties that may contain "hot spots" at levels of sub-chronic or acute concern. If a property sampling results fail the screening test, at minimum that property will be resampled to evaluate whether unacceptable concentrations remain. Attachment 1 provides a screening level evaluation of risks from acute and subchronic risks to potential hot spots within a property. The methods used to screen analytical results to determine if additional actions are needed should be clearly explained.

Thank you for the opportunity to comment on this document. If you have any questions regarding these comments, please contact me at 303-285-4065.

Sincerely,



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Denver Department of Environmental Health

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